

REMARKS

Claims 17, 18, 20 and 21 are pending in the application. Claims 17, 18, 20 and 21 are rejected by the Examiner.

Claims 17, 18, 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Newsome (4,457,960) in view of Lai et al. (5,272,236) and further in view of Wilhoit (5,283,128).

It is the Examiner's position based on the Newsome and Lai references that it would have been obvious to one skilled in the art to substitute the polymer described in Lai in the film structure described in Newsome. It is also the Examiner's position that irradiation of similar film material to that of Newsome is taught by the Wilhoit reference. A complete discussion of the Examiner's position regarding the above rejections is found in paper 36.

With respect to the rejection under 35 U.S.C. §103(a) of claims 17, 18, 20 and 21 as being unpatentable over Newsome in view of Lai and further in view of Wilhoit, Applicants respectfully submit that the claims distinctly define the present invention from any of the art of record taken singly or in combination, in view of the remarks presented below and in view of the Declaration under 1.132 of Dr. Keith Lind, which was originally submitted on July 17, 2003 for a copending divisional application. A copy of the Declaration is enclosed for the convenience of the Examiner. The declaration discusses in great detail the numerous factors which must be considered in the design of a specific film structure. The declaration further discusses the chemical and physical distinctions between the two linear low density polyethylenes.

Newsome discloses a linear low density polyethylene in multiple layer, molecularly oriented films. Newsome further discloses linear low density polyethylene blended with ethylene vinyl acetate copolymers. These blends (linear low density polyethylene and ethylene

vinyl acetate copolymers) are also disclosed as being useful in conjunction with a barrier layer wherein ethylene vinyl alcohol copolymer is exemplified as a barrier resin. Newsome, however, discloses a linear low density polyethylene which is chemically and physically distinct from the linear low density polyethylene taught in Applicants' claims. Furthermore, Newsome does not teach or suggest that any other linear low density polyethylene could be used, let alone the linear low density polyethylene of Applicants' claims.

Lai, however, discloses a class of linear olefin polymers having certain characteristics and improvements over conventional LLDPE such as the LLDPE taught by Newsome. Lai further discloses a process of manufacturing said linear olefin polymers. Lai also discloses that these polymers are useful in a variety of areas such as fibers, films and molded parts. There is, however, no teaching or suggestion by Lai to use the linear olefin polymers in Applicants' specific type of film structures, how these polymers would react or even how they could be useful within the context of Applicants' specific film structures. In addition, there is certainly no teaching in Lai or Newsome to combine the teachings to make the claimed invention.

The design of specific film structures involves the consideration of many factors. These factors can be exemplified by, but not limited to, processability of the individual layers or the entire film structure, hot tack, heat sealability, coefficient of friction, etc.

Lai neither teaches nor suggests how any of these factors would be addressed with the use of Lai's polymer within the context of Applicants' specific film, structure.

A disclosure of a monolayer film structure comprising solely the polymer of Lai does not address the factors discussed above. Because these factors change with the introduction of another resin (i.e., ethylene vinyl acetate copolymer) or with the introduction of a barrier layer (ethylene vinyl alcohol copolymer) in a film structure, there is no way of predicting whether the

film structure having more than one component will be viable based on the knowledge derived from the Lai disclosure.

In pursuing this invention the inventors had to determine by experimentation that the materials with a molecular weight distribution (M_w/M_n) of 2.5 were processable for the current intended use. It was determined that materials with the claimed I_{10}/I_2 ratio could be successfully extruded and formed into the claimed film structure.

During the double bubble orientation process, SSC materials with narrow molecular weight distributions are difficult to draw down to obtain the desired level of orientation and free shrink. The material can fracture and the bubble will break to stop the process during orientation. Again, the inventors were required to determine by experimentation that the claimed film structures made with the claimed materials were, in fact orientable in the double bubble process employed to manufacture the film.

Therefore, it is Applicants' position that the design of a viable film structure involves the consideration of many factors as indicated above. Without experimentation, there would be no way of predicting how any of the various factors, either singularly or in combination, could be affected by a change in a component of the film structure (i.e., substituting one LLDPE for another LLDPE). Therefore, given the chemical and physical differences between the LLDPE in Newsome and the LLDPE of Applicants' claimed film structure, the lack of teaching or suggestion in Lai as to how its polymer would affect the various considerations discussed earlier for specific film structures or even in a class of specific film structure (i.e., barrier film, blended films, etc.) and the unpredictability as to the effect of altering the components of a specific film structure, it is not seen how these references either singularly or in combination can obviate claims 17, 18, 20 and 21.

Wilhoit discloses a heat-shrinkable film comprising a three component blend wherein said blend comprises a polyethylene member selected from the group consisting of VLDPE and LLDPE or a mixture thereof, ethylene alpha-olefin plastomer copolymer of density below 0.90 g/cm³, and ethylene vinyl acetate copolymer. Therefore, in Wilhoit, whether the film is a monolayer or a multilayer, at least one layer must comprise the above-described blend.

Applicants' invention is to a five-layer film structure comprising a first-barrier layer, a second and third adhesive layer disposed on opposing surfaces of said first layer, a fourth layer of ethylene vinyl acetate copolymer, and a fifth layer of an ethylene alpha-olefin copolymer formed by a single site catalyst process. Applicants' film structure is totally distinct from the teaching of Wilhoit because no such blend is present in Applicants' invention. Wilhoit's teaching of irradiating a film comprising the above-described blend does not make obvious irradiation of Applicants' film structure because Applicants film structure is distinct from that taught by Wilhoit. One cannot predict that the irradiation of a given film structure will be successful based on the irradiation of a totally different structure.

It is Applicants' position, therefore, that in view of Applicants' remarks regarding the patentability of the present invention over the art, the rejections under 35 U.S.C. §103 have been overcome.

Claims 17, 18, 20 and 21 are rejected by the Examiner under 35 U.S.C. 103(a) as being unpatentable over Newsome (4,457,960) in view of Schut "Enter a New Generation of Polyolefins" Nov. 1991, Plastics Technology, or Van der Sanden "A New Family of Linear Ethylene Polymers With Enhanced Sealing Performance" February 1992, and further in view of Wilhoit (5,283,128).

The Newsome and Wilhoit references have been discussed above.

The Schut reference discloses polyethylenes made using different single-site catalysts. The Schut reference further discloses that these polyethylenes, depending on the process and single-site catalyst used can produce, polyethylenes having usefulness in many different applications. The Schut reference does not teach or suggest Applicants' specific multilayer, irradiated films having the Applicants' particular configuration.

The Van der Sanden reference discloses linear ethylene polymer having lower seal initiation temperatures, toughness and strength. There is no disclosures in Van der Sanden of the flow rate ratio of the single site catalyst polymers, nor of any favorable results that arise from the use of ethylene alpha-olefin copolymers formed from a polymerization reaction in the presence of a single-site catalyst having range of molecular weight distribution and flow rate ratio contained in the amended claims. Additionally, while Van der Sanden teaches the favorable property of narrow molecular weight distribution, it does not teach the particular range recited in the amended claims or the use of the ethylene alpha-olefin copolymer in Applicants' particular film structure.

Applicants' respectfully submit that in view of the above remarks, this rejection has been overcome.

Claims 17, 18 and 21 are rejected under 35 U.S.C. § 102(e) as being anticipated by Ahlgren (U.S. Patent 5,604,043).

The present application (U.S. Serial No. 09/369,980) is a divisional of U.S. Serial No. 08/899,410, filed July 23, 1997, which is a continuing (file wrapper continuation) application of U.S. Serial No. 08/481,685, filed June 7, 1995. During the prosecution of U.S. Serial No. 08/481,685, Applicants claimed priority under 35 U.S.C. § 120 from U.S. application Serial No. 08/082,226, filed June 24, 1993. This priority claim was asserted in a response filed August 22,

1996 in reply to the Office Action dated February 22, 1996 for U.S. Serial No. 08/481,685. Therefore, Applicants respectfully submit that based on the effective date of June 24, 1993, for the present application, U.S. Patent No. 5,604,043 to Ahlgren does not qualify as prior art because of its (Ahlgren) effective filing date of September 20, 1993.

Claim 20 is rejected by Examiner under 35 U.S.C. 103(a) as being unpatentable over Ahlgren (U.S. 5,604,043).

In response to this rejection, the Examiner's attention is directed to Applicants' previous remarks regarding the Ahlgren reference.

Claims 17, 18, 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Newsome in view of Ahlgren.

In response to this rejection, the Examiner's attention is directed to Applicants' previous remarks regarding Newsome and Ahlgren.

Double Patenting

Claims 17, 18, 20 and 21 are provisionally rejected by the Examiner under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 22-44 of copending Application No. 08/899,410.

With respect to the provisional rejection of claims 17, 18, 20 and 21 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 22-44 of copending Application No. 08/899,410, Applicants will be willing to consider submitting a Terminal Disclaimer to overcome this rejection after the remaining rejections have been withdrawn and upon receiving an indication of allowable subject matter.

Claims 17, 18, 20 and 21 are also provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 22-27 of copending Application No. 09/369,978.

With respect to the provisional rejection of claims 17, 18, 20 and 21 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 22-27 of copending Application No. 09/369,978, Applicants again will be willing to consider submitting a Terminal Disclaimer to overcome this rejection after the remaining rejections have been withdrawn and upon receiving an indication of allowable subject matter.

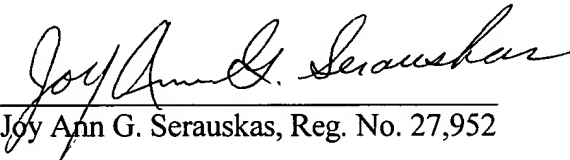
CONCLUSION

In view of the foregoing remarks, Applicants respectfully submit that all of the claims in the application are in allowable form and that the application is now in condition for allowance. If, however, any outstanding issues remain, Applicants urge the Examiner to telephone Applicants' agent so that the same may be resolved and the application expedited to issue.

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Respectfully submitted,


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